

Energy Stores + Systems

Question Paper

Level	GCSE (9-1)
Subject	Combined Science: Trilogy - Physics
Exam Board	AQA
Topic	6.1 Energy
Sub-Topic	Energy Stores + Systems
Difficulty Level	Gold Level
Booklet	Question Paper

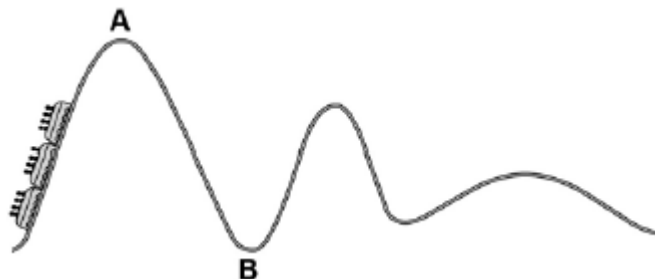
Time Allowed: 12 minutes

Score: /11

Percentage: /100

Grade Boundaries:

Q1. The figure below shows a rollercoaster.



The rollercoaster car is raised a vertical distance of 35 m to point **A** by a motor in 45 seconds.

The mass of the rollercoaster is 600 kg.

The motor has a power rating of 8 000 W.

- (a) Calculate the percentage efficiency of the motor.

Gravitational field strength = 9.8 N / kg.

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Efficiency = %

(5)

- (b) The rollercoaster rolls from point **A** to point **B**, a drop of 35 m.

Calculate the speed of the roller coaster at point **B**.

Assume that the decrease in potential energy store is equal to the increase in kinetic energy store.

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Speed at point **B** = m / s

(6)
(Total 11 marks)